



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/431,758	11/01/1999	JOSEPH G. MURPHY	07072-919001	9176
24227	7590	02/23/2004		
EMC CORPORATION OFFICE OF THE GENERAL COUNSEL 176 SOUTH STREET HOPKINTON, MA 01748			EXAMINER VAUGHN JR, WILLIAM C	
			ART UNIT	PAPER NUMBER
			2143	14
DATE MAILED: 02/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/431,758

Applicant(s)

MURPHY ET AL.

Examiner

William C. Vaughn, Jr.

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

WCA

DETAILED ACTION

1. This Action is in response to the Amendment and Reply received on 08 December 2003.

Response to Arguments

2. Applicant's arguments and amendments filed on 08 December 2003 have been carefully considered but they are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new grounds of rejection as explained here below, necessitated by Applicant's substantial amendment (i.e., *one or more clients independent of the storage area network ...an operation status of the storage devices to the one or more independent clients via the second communications network...fro ensuring that the at least one independent client is able to access the storage management... storage devices*) to the claims which significantly affected the scope thereof.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 1-24** are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Applicant's specification lacks the proper teachings that is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant claims an operation status of the storage devices to the one or more independent clients via the second

Art Unit: 2143

communications and an object-oriented dynamic linking mechanism for ensuring that the at least one independent client is able to access the storage management server. Applicant only implies a states on page 7, lines 5-18, that clients communicate with management server through an on-line object request broker whereas the object request broker serves as a remote access adapter interface for ensuring that a client is able to access management server. However, Applicant claims an object-oriented dynamic linking mechanism, which in the networking art deals primarily with a library, which is linked, to application programs when they are loaded or run rather than as the final phase of compilation. Which primarily deals with the kernel of the operating system. Thus, Applicant has not provided within the specification the details needed in order to utilize object-oriented dynamic linking mechanism in order to facilitate communication and/or access from the clients and management servers. It would require undue experimentation for one of ordinary skill in the networking art at the time the invention was made to determine the details of using the object-oriented dynamic linking mechanism to allow for the client to access the storage management server.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2143

6. **Claims 1-7, 9-14 and 16-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (Weber), U.S. Patent No. 6,480,901 in view of Axberg et al. (Axberg), U.S. Patent No. 6,253,240.

7. Weber discloses the invention substantially as claimed. Weber discloses *a network architecture for the management of a storage area network by one or more clients independent of the storage area network comprising: a storage area network comprising a storage system including a plurality of storage devices system including a plurality of storage devices* [see Weber, items 124, 140 and 150]; *a plurality of host computers connected to the storage system through a first communication network* (item 102), [see Weber, items 122 and 126, Col. 5, lines 27-31], *each host computer including at least one agent for transmitting data to and retrieving data from one or more of the plurality of storage* [see Weber, Col. 11, lines 5-13]; *one or more storage management servers* (items 112 and 114) *in communication with each of the plurality of host computers via its agent* (Weber teaches that management stations [see Weber, Col. 9, lines 17-67] *one or more clients* (items 902 and 910) *independent of the storage area network, the one or more management servers being adapted to connect to the one or more independent clients via a web-based second communication network* (item 120),], *the one or more storage management servers providing information received from an agent and relating to the operation status of the storage devices to the one or more independent clients via the second communications network and so that the one or more clients can manage one or more storage devices of the plurality of storage devices* (Weber teaches that clients periodically receive request progress data from controller), [see Weber, Col. 18, lines 25-67 and Col. 19, lines 1-7]. However, Weber does not explicitly disclose an object-oriented linking mechanism.

Art Unit: 2143

8. In the same field of endeavor, Axberg discloses (e.g., a distributed storage management program manages a network comprising multiple data storage devices attached to multiple host computer systems). Axberg discloses an object-oriented linking mechanism [see Axberg, Col. 9, lines 50-67, Col. 10, lines 1-10, Col. 18, lines 1-63].

9. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Axberg's teachings of a distributed storage management program manages a network comprising multiple data storage devices attached to multiple host computer systems with the teachings of Weber, for the purpose of

10. Regarding **claim 2**, Weber-Axberg discloses *wherein the storage management server includes: a poller for gathering the information relating to the operation status of the storage device* (Axberg teaches that within the memory area is an agent portion of the storage management program that performs data gathering and monitoring functions by polling hosts and I/O controllers in order to determine the existing topology of the storage network), [see Axberg, Col. 8, lines 24-30]; *and a central repository for storing the information relating to the operation status of said one of the storage devices* (Axberg teaches that information is contained in logical format in a central repository), [see Axberg, Col. 3, lines 62-64]; *and an object server for distributing the information relating to the operation status of the storage devices to the clients* (Axberg teaches utilizing storage management program that is implemented in an object-oriented programming code to manipulate object corresponding to events regarding configuration, device characteristics etc), [see Axberg column 9, lines 52-67, Col. 10, lines 1-18]. By this rationale **claim 2** is rejected.

Art Unit: 2143

11. Regarding **claim 3**, Weber-Axberg further discloses wherein the poller polls each of the storage devices at predetermined intervals to maintain the current status of the operation of each of the storage devices [see Axberg, Col. 19, lines 36-42]. By this rationale **claim 3** is rejected.

12. Regarding **claim 4**, Weber-Axberg further discloses wherein the predetermined interval is less than or equal to one minute [see Axberg, Col. 19, lines 36-42]. By this rationale **claim 4** is rejected.

13. Regarding **claim 5**, Weber-Axberg further discloses *wherein the storage management server further provides information relating to the operation status of storage connectivity devices which connect storage devices to the clients* (Axberg discloses storage management programs data gathering and monitoring function which can send a message to a Vdevice object causing its display to change in response to some event occurring on the network corresponding to providing information relating to operational status), [see Axberg, Col. 10, lines 1-10, 42-46 and Col. 11, lines 12-17]. By this rationale **claim 5** is rejected.

14. Regarding **claim 6**, Weber-Axberg further discloses *wherein the storage management server includes: a poller for gathering the information relating to the operation status of the storage device and storage connectivity devices* (Axberg teaches displaying the interconnecting relationships between different physical objects (storage device and storage connectivity), [see Axberg, Col. 9, lines 53-56 and Col. 11, lines 12-17]; *and a central repository* [see Axberg, Col. 3, lines 62-64] *for storing the information relating to the operation status of said one of the storage devices and storage connectivity devices* [see Axberg, Col. 8, lines 24-30] *and an object server for distributing the information relating to the operation status of the storage devices and storage connectivity devices to the clients* (Axberg teaches utilizing storage management

Art Unit: 2143

program that is implemented in an object-oriented programming code to manipulate object corresponding to events regarding configuration, device characteristics etc), [see Axberg column 9, lines 52-67, Col. 10, lines 1-18].

15. Regarding **claim 7**, Weber-Axberg further disclose *wherein the poller polls each of the storage connectivity devices at predetermined intervals to maintain current status of the operation of each of the storage connectivity devices* [see Axberg, Col. 11 lines 12-17, Col. 19, lines 36-67 and Col. 20, lines 24-33]. By this rationale **claim 7** is rejected.

16. Regarding **claim 9**, Weber-Axberg further discloses *wherein the storage management server includes a web server for communicating with the plurality of clients* [see Sitka, Col. 4, lines 36-50]. By this rationale **claim 9** is rejected.

17. Regarding **claim 10**, Weber-Axberg further discloses *wherein each of the clients includes a graphical user interface* [see Axberg Col. 27, line 25-36] *for displaying the information relating to the operation status* [see Axberg, Col. 9, lines 65-67 and Col. 10, line 1] *of the storage devices* [see Axberg Col. 28, lines 15-19]. By this rationale **claim 10** is rejected.

18. Regarding **claim 11**, Weber-Axberg further discloses *wherein the plurality of host computers is of different types* [see Axberg, Col. 8, lines 20-23]. By this rationale **claim 11** is rejected.

19. Regarding **claim 12**, Axberg further discloses *wherein the plurality of storage devices is of different types* [see Axberg, Col. 6, lines 53-60]. By this rationale **claim 12** is rejected.

20. Regarding **claim 13**, the limitations of this claim is substantially the same as that of claim 1, and is thus rejected for the same rationale in rejecting claim 1, above.

Art Unit: 2143

21. Regarding **claim 14**, Weber-Axberg further discloses *wherein each of the storage management servers includes: a poller for gathering the information relating to the operation status of the storage device* (Axberg teaches that within the memory area is an agent portion of the storage management program that performs data gathering and monitoring functions by polling hosts and I/O controllers in order to determine the existing topology of the storage network), [see Axberg, Col. 8, lines 24-30]; *and a central repository for storing the information relating to the operation status of said one of the storage devices* (Axberg teaches that information is contained in logical format in a central repository), [see Axberg, Col. 3, lines 62-64]; *and an object server for distributing the information relating to the operation status of said one of the storage devices to at least one of the clients* (Axberg teaches utilizing storage management program that is implemented in an object-oriented programming code to manipulate object corresponding to events regarding configuration, device characteristics etc), [see Axberg column 9, lines 52-67, Col. 10, lines 1-18]. By this rationale **claim 14** is rejected.

22. **Claims 16-20** lists all the same elements claims 1, 2, 3 and 5, but in method form rather than apparatus form. Therefore, the supporting rationale of the rejection to claims 1, 2, 3 and 5 applies equally as well to claims 16-20.

23. Regarding **claim 21**, Weber-Axberg further discloses *wherein the second communications network us an Intranet* [Official Notice, see MPEP 2144.03]. By this rationale **claim 21** is rejected.

24. Regarding **claim 22**, Weber-Axberg further discloses *wherein the first communications network is a Fibre Channel network* [see Weber, item 126, Col. 5, lines 27-31]. By this rationale **claim 22** is rejected.

Art Unit: 2143

25. Regarding **claim 23**, Weber-Axberg further discloses *wherein the second communications network is an Intranet* [Official Notice, see MPEP 2144.03]. By this rationale **claim 23** is rejected.

26. Regarding **claim 24**, Weber-Axberg further discloses *wherein the first communications network is a Fibre Channel network* [see Weber, item 126, col. 5, lines 27-31]. By this rationale **claim 24** is rejected.

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber-Axberg as applied to claim 1 above, and further in view of Sitka, U.S. Patent No. 6,330,572.

29. Regarding **claim 8**, Weber-Axberg discloses the invention substantially as claimed.

However, Weber-Axberg does not explicitly disclose a security component for limiting access by a client to one or more of the storage devices.

30. In the same field of endeavor, Sitka discloses (e.g., a system and method for managing storage of files within an hierarchical storage management (HSM) system). Sitka discloses *a security component for limiting access by a client to one or more of the storage devices* [see Sitka, Col. 3, lines 40-54].

Art Unit: 2143

31. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Sitka's teachings of a system and method for managing storage of files within an hierarchical storage management (HSM) system with the teachings of Weber-Axberg, for the purpose of improving overall economy of storage while maintaining workflow efficiency for each use. Thus, the system of Axberg provides motivation to combine the system, by stating the desire to support the construction and maintenance of storage networks with software that assists the user [see Axberg, Col. 2, lines 49-51]. By this rationale **claim 8** is rejected.

Claim Rejections - 35 USC § 103

32. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Weber-Axberg as applied to claim 14 above, and further in view of McChesney et al. (McChesney), U.S. Patent No. 5,854,102.

33. Regarding **claim 15**, Weber-Axberg discloses the invention substantially as claimed. However, Weber-Axberg does not explicitly disclose a name server, connected to each of the plurality of storage management servers to determine which of the central repositories of the plurality of storage management servers includes the: information relating to the operation status of said one of the storage devices.

34. In the same field of endeavor, McChesney discloses (e.g., a system and method for performing administrative operations on object oriented applications operating in a distributed object programming environment). McChesney discloses *name server, connected to each of the plurality of storage management servers, to determine which of the central repositories of the*

Art Unit: 2143

plurality of storage management servers includes the information relating to the operation status of said one of the storage devices [see McChesney, Col. 2, lines 9-12, Col. 5, 43-67 and Col. 6, lines 1-19].

35. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated McChesney teachings of a system and method for performing administrative operations on object oriented applications operating in a distributed object programming environment with the teachings of Weber-Axberg in order to provide a system and method for obtaining and manipulating configuration information about servers on computes in a distributed object programming environment as well as utilizing a naming server that resolves names provided by clients through the use of object references to a client [see McChesney, Col. 5, lines 51-67].

Response to Arguments

36. Applicant's arguments include the failure of previously applied art to expressly disclose a web-based second communications network external as well as object-oriented dynamic linking mechanism (see Applicant's Response, Paper# 13, page s 11-14). It is evident from the detailed mappings found in the above rejection(s) that Weber-Axberg in combination disclosed this functionality. Further, it is clear from the numerous teachings (previously and currently cited) that the provision for management by one or more clients via an object-oriented dynamic linking mechanism so that the one or more clients can manage the one or more plurality of storage devices, was widely implemented in the networking art. Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not

Art Unit: 2143

considered persuasive. It is also requested that Applicant further clarify language regarding the object-oriented dynamic linking mechanism to conform more to the language and teachings of the specification, which would further expedite prosecution of the application.

Conclusion

37. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Vaughn, Jr. whose telephone number is (703) 306-9129. The examiner can normally be reached on 8:00-6:00, 1st and 2nd Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2143

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WCV

WCV
Patent Examiner
Art Unit 2143
09 February 2004

MEHMET B. GECKIL
PRIMARY EXAMINER

Mehmet Geckil